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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,482	10/31/2003	Yong-Gi Kim	P2047US	3157

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EXAMINER	
MADDEN, GREGORY VINCENT	
ART UNIT	PAPER NUMBER
2622	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/25/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/699,482	KIM ET AL.	
	Examiner	Art Unit	
	Gregory V. Madden	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☒ Claim(s) *14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

Claim 14 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 8. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-7, 11-13, 16, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Bateman (U.S. Pub. 2004/0075750).

First, regarding **claim 1**, the Bateman reference teaches a digital camera (camera 110) comprising a means for saving an additional digital image in a storage space (memory module 125) containing a stored digital image that has insufficient space for the additional digital image (memory is full), wherein

the means reduces the size of the stored digital image by resetting one or both of the resolution and the compression ratio of the stored digital image. Please refer to Figs. 1 and 4, Paras. [0026-0035], [0044-0045], and [0051-0055].

In regard to **claim 2**, the limitations of claim 1 are taught above, and Bateman further teaches that the size of the storage space remaining in the storage space (memory module 125) is compared with the size required for saving the additional digital image, as is taught in Paras. [0051-0055]. While Bateman does not specifically disclose that the means comprises an image signal processor for carrying out this comparison, it is inherent that the digital camera (110) would contain an image signal processor to process the image signals received from capture module 115.

As for **claim 3**, the limitations of claim 2 are taught above, and the Bateman reference further discloses that the image signal processor automatically changes one or both of the resolution and compression ratio of the stored digital image when the size required for saving the additional image is larger than the size of the storage space remaining in the storage space. Please refer again to Paras. [0051-0055].

Next, considering **claim 4**, the limitations of claim 3 are taught above, and while Bateman does not specifically disclose an image signal processor that processes a signal containing digital image information, it is inherent that the digital camera (110) would process digital image information (from capture module 115) using some sort of image signal processor. Please refer to Fig. 1 and Paras. [0026-0029].

Regarding **claim 5**, the limitations of claim 4 are taught above, and Paras. [0027-0028] of the Bateman reference teaches that the image signal is sent from the capture module 115 to a storage device (within memory module 125) which stores the digital image information.

As for **claim 6**, again the limitations of claim 1 are set forth above, and the Bateman reference teaches that the digital camera (110) further comprises a setting device that allows a user to set the

resolution and compression ratio (selected quality setting) for the signal processed by the image signal processor, as is taught in Para. [0033].

In regard to **claim 7**, the limitations of claim 1 are taught above, and Bateman also discloses that a control device determines the amount of available memory in a storage space (memory module 125), calculates the amount of memory required for a single image at the current resolution and compression, and changes one or both of the resolution and compression ratio settings when the memory available in storage is less than the amount of memory required to store an image (See Paras. [0051-0055]). Again, while the Bateman reference does not specifically disclose a control device to make this determination, it is inherent that the digital camera (110) must include some sort of control device to determine availability of storage space.

Next, considering **claim 11**, Bateman teaches a digital camera comprising an imaging means (capture module 115) that takes a picture of a subject's image and generates an image signal, an image signal processing means that performs predetermined and compression processes on the image signal and generates digital image information, a storage means (within memory module 125) that stores the digital image information, a setting means that allows a user to set the resolution and compression ratio at which the image signal is processed by the image signal processing means, and a control means that sends the resolution and compression ratio set by the setting means to the image signal processing means, wherein the image signal processing means changes one or both of the resolution and the compression ratio when the storage means has an insufficient space to store images. Again, please refer to Figs. 1 and 4, Paras. [0026-0035], [0044-0045], and [0051-0055].

Regarding **claim 12**, the limitations of claim 11 are taught above, and the Bateman reference teaches that the image signal processing means changes the compression ratio when the storage means has an insufficient space to store new images, as is taught in Para. [0033].

As for **claim 13**, again the limitations of claim 11 are taught above, and Bateman also teaches that the image signal processing means changes the resolution compression ratio when the storage means has an insufficient space to store new images, again as is taught in Para. [0033]. See also Para. [0054].

Next, in regard to **claim 16**, the Bateman reference discloses a method for saving images in a digital camera (110) comprising the steps of checking whether a free space for storing images remains on the storage means, checking a space required for storing one image at current resolution and compression ratio, comparing the size of the remaining storage space with that of the required storage space, entering a standby mode so that the images can be taken at the current resolution and compression ratio (quality setting) if the remaining storage space is larger than the required storage space, determining whether a new resolution and compression ratio is available at which an additional image can be stored on the remaining space if the required storage space is larger than the remaining storage space, determining and resetting the new resolution and compression ratio, and entering standby mode so that the additional image can be taken after automatically changing the current resolution and compression ratio to the new ones. Please refer again to Figs. 1 and 4, Paras. [0026-0035], [0044-0045], and [0051-0055].

Finally, considering **claim 18**, the limitations of claim 16 are taught above, and Bateman further teaches in Para. [0031] that the new resolution and the compression ratio are the highest possible resolution and the lowest possible compression ratio (i.e. highest possible quality) to the extent that an additional image can be saved on the remaining storage space.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 8-10, 14, 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bateman (U.S. Pub. 2004/0075750) in view of Aruga et al. (U.S. Pat. 6,429,896).

Considering **claim 8**, the limitations of claim 1 are taught above by the Bateman reference, and while the Bateman reference does teach that the digital camera contains a display means (display module 135) that displays various information about the image (See Para. [0029]), but Bateman fails to specifically disclose that information about the number of images remaining that can be stored on the storage means and resolution and compression ratio of the images saved on the storage means are displayed on the display means. However, the Aruga reference teaches a digital camera has an operating section having a display means (display section 4), wherein the display means displays information about the number of remaining images that can be stored on the storage means (4c in Fig. 4) and resolution and compression ratio of the images saved on the storage means (as shown in Figs. 6 and 7). Please also refer to Col. 5, Lines 24-30, and Col. 7, Lines 13-38. It would have been obvious to one of ordinary skill in the art to include the displaying of information regarding the number of remaining images on the storage means and the resolution and compression ratio information, as taught by Aruga, with the displaying of image information of Bateman. One would have been motivated to do so because displaying the information such as the number of remaining images would allow the user to easily track the remaining storage capacity and make changes to the resolution and/or compression ratio settings if needed to increase the number of remaining images available in the storage means.

As for **claim 9**, the limitations of claim 2 are taught above, and while the Bateman reference does not explicitly teach that the image signal processor is a digital signal processor, the Aruga reference does teach that the image signal processor (CPU 15) is a digital signal processor in Col. 3, Line 42 – Col. 4, Line 17.

In regard to **claim 10**, the limitations of claim 7 are set forth above, but the Bateman reference fails to specifically disclose that the control device comprises a microcontroller. However, the Aruga reference teaches that the control device (control unit 14 in Fig. 3) comprises a microcontroller, as is taught in Col. 3, Lines 42-45.

Next, regarding **claim 14**, the limitations of claim 1 are taught above by the Bateman reference, and while the Bateman reference does teach that the digital camera contains a display means (display module 135) that displays various information about the image (See Para. [0029]), but Bateman fails to specifically disclose that information about the number of images remaining that can be stored on the storage means and resolution and compression ratio of the images saved on the storage means are displayed on the display means. However, the Aruga reference teaches a digital camera has an operating section having a display means (display section 4), wherein the display means displays information about the number of remaining images that can be stored on the storage means (4c in Fig. 4) and resolution and compression ratio of the images saved on the storage means (as shown in Figs. 6 and 7). Please also refer to Col. 5, Lines 24-30, and Col. 7, Lines 13-38.

As for **claim 15**, the limitations of claim 14 are taught above, and the Aruga reference discloses that the display means (display section 4) is a display device that shows information about the image (such as resolution), as is taught in Col. 5, Lines 24-30, and Col. 7, Lines 13-38.

Finally, considering **claim 17**, the limitations of claim 16 are taught above by Bateman, and while the Bateman reference does teach that the digital camera contains a display device (display module 135) that displays various information about the image (See Para. [0029]), but Bateman fails to specifically disclose the step of displaying information about the number of images remaining that can be stored on the storage means and resolution and compression ratio of the images saved on the storage means. However, the Aruga reference teaches a digital camera has an operating section having a display device (display section 4), wherein the display device displays information about the number of remaining

images that can be stored on the storage means (4c in Fig. 4) and resolution and compression ratio of the images saved on the storage means (as shown in Figs. 6 and 7). Please also refer to Col. 5, Lines 24-30, and Col. 7, Lines 13-38.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Rabbani et al. (U.S. Pat. 6,885,395)

Tsubaki et al. (U.S. Pat. 6,539,169)

Kaku (U.S. Pub. 2002/0109780)

Kuroiwa (U.S. Pub. 2002/0097362)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory V. Madden whose telephone number is 571-272-8128. The examiner can normally be reached on Mon.-Fri. 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc Yen Vu can be reached on 571-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gregory Madden
January 11, 2007

NGOC-YEN VU
SUPERVISORY PATENT EXAMINER